

GOVERNMENT POLYTECHNIC KENDRAPARA				
LESSON PLAN-4 <sup>th</sup> SEMESTER MECHANICAL (SUMMER 2025)				
SUBJECT - MANUFACTURING TECHNOLOGY (TH-2)			SESSION-2024-2025	
Name of the Faculty- SRI BISWAJIT PARIDA				
MONTH	CHAPTER /TOPIC	COURSE TO BE COVERED	CLASSES REQUIRED	REMARKS (IF ANY)
	<b>Chapter-1</b>	<b>Tool Materials:</b>	<b>4</b>	
	1.1	Composition of various tool materials	2	
	1.1	Physical properties & uses of such tool materials.	2	
	<b>Chapter -2</b>	<b>Cutting Tools:</b>	<b>6</b>	
	2.1	Cutting action of various and tools such as Chisel, hacksaw blade, dies and reamer	2	
	2.2	Turning tool geometry and purpose of tool angle	3	
	2.3	Machining process parameters (Speed, feed and depth of cut)	1	
	2.4	Coolants and lubricants in machining and purpose	1	
	<b>Chapter-3</b>	<b>Lathe Machine:</b>	<b>8</b>	
	3.1	<b>Construction and working of lathe and CNC lathe</b> <ul style="list-style-type: none"> <li>• Major components of a lathe and their function</li> <li>• Operations carried out in a lathe (Turning, thread cutting, taper turning, internal machining, parting off, facing, knurling)</li> <li>• Safety measures during machining</li> </ul>	2	
	3.2	<b>Capstan lathe</b> <ul style="list-style-type: none"> <li>• Difference with respect to engine lathe</li> <li>• Major components and their function</li> <li>• Define multiple tool holders</li> </ul>	2	
	3.3	<b>Turret Lathe</b> <ul style="list-style-type: none"> <li>• Difference with respect to capstan lathe</li> <li>• Major components and their function</li> </ul>	2	
	3.4	Draw the tooling layout for preparation of a hexagonal bolt & bush	2	
	<b>Chapter-4</b>	<b>Shaper:</b>	<b>6</b>	
	4.1	Potential application areas of a shaper machine	1	
	4.2	Major components and their function	1	
	4.3	Explain the automatic table feed mechanism	1	
	4.4	Explain the construction & working of tool head	1	
	4.5	Explain the quick return mechanism through sketch	1	
	4.6	State the specification of a shaping machine.	1	

	<b>Chapter-5</b>	<b>Planing Machine:</b>	<b>6</b>	
	5.1	Application area of a planer and its difference with respect to shaper	1	
	5.2	Major components and their functions	1	
	5.3	The table drive mechanism	2	
	5.4	Working of tool and tool support	1	
	5.5	Clamping of work through sketch.	1	
	<b>Chapter-6</b>	<b>Milling Machine:</b>	<b>08</b>	
	6.1	Types of milling machine and operations performed by them and also same for CNC milling machine	1	
	6.2	Explain work holding attachment	1	
	6.3	Construction & working of simple dividing head, universal dividing head	2	
	6.4	Procedure of simple and compound indexing	2	
	6.5	Illustration of different indexing methods	2	
	<b>Chapter-7</b>	<b>Slotter</b>	<b>6</b>	
	7.1	Major components and their function	2	
	7.2	Construction and working of slotter machine	2	
	7.3	Tools used in slotter	2	
	<b>Chapter-8</b>	<b>Grinding</b>	<b>6</b>	
	8.1	Significance of grinding operations	1	
	8.2	Manufacturing of grinding wheels	2	
	8.3	Criteria for selecting of grinding wheels	1	
	8.4	Specification of grinding wheels with example Working of <ul style="list-style-type: none"> <li>• Cylindrical Grinder</li> <li>• Surface Grinder</li> <li>• Centreless Grinder</li> </ul>	2	
	<b>Chapter-9</b>	<b>Internal Machining operations</b>	<b>6</b>	
		Classification of drilling machines		
	9.1	Working of <ul style="list-style-type: none"> <li>• Bench drilling machine</li> <li>• Pillar drilling machine</li> <li>• Radial drilling machine</li> </ul>	2	

	9.2	<b>Boring</b> <ul style="list-style-type: none"> <li>• Basic Principle of Boring</li> <li>• Different between Boring and drilling</li> </ul>	2	
	9.3	<b>Broaching</b> <ul style="list-style-type: none"> <li>• Types of Broaching(pull type, push type)</li> <li>• Advantages of Broaching and applications</li> </ul>	2	
	<b>Chapter-10</b>	<b>Surface finish, lapping</b>	<b>4</b>	
	10.1	Definition of Surface finish	2	
	10.2	Description of lapping& explain their specific cutting.	2	



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